

I CLAIM:

1. An apparatus for forming a substrate from a sheet of a porous material, the substrate being of an interior trim part for a vehicle compartment, the apparatus comprising:

a first mold part;

a second mold part opposite the first mold part, the second part cooperating with the first mold part to receive the sheet and define a predetermined shape of the substrate; and

a retaining portion formed at an outer periphery of the first and second mold parts, the retaining portion configured to maintain tension to the sheet at the outer periphery during forming of the substrate to freely retain the sheet between the first and second mold parts.

2. The apparatus according to claim 1, wherein the first and second mold part are configured to apply between 10 and 50 PSI of pressure to the sheet.

3. The apparatus according to claim 1, wherein the retaining portion is a generally C-shaped section.

4. The apparatus according to claim 1, wherein the first mold part is made of Ren board.

5. The apparatus according to claim 1, wherein the second mold part is made of Ren board.

6. An apparatus for forming a substrate from a sheet of a porous material, the substrate being of an interior trim part for a vehicle compartment, the apparatus comprising:

a first mold part;

a second mold part opposite the first mold part, the second mold part cooperating with the first mold part to receive the sheet, the first and second mold parts defining general and radius portions of the substrate, the first and second mold parts having a clearance of about 2 to 3 millimeters at the general portions and about 1 to 2 millimeters at the radius portions; and

a retaining portion formed at an outer periphery of the first and second mold parts, the retaining portion configured to maintain tension to the sheet at the outer periphery during forming of the substrate to retain the sheet between the first and second parts.

7. The apparatus according to claim 6, wherein the first and second part are configured to apply between 10 and 50 PSI of pressure to the sheet.

8. The apparatus according to claim 6, wherein the retaining portion is a generally C-shaped section.

9. The apparatus according to claim 6, wherein the first mold part is made of Ren board.

10. The apparatus according to claim 6, wherein the second mold part is made of Ren board.

11. A method for producing an interior trim part for a vehicle compartment, the method comprising:

- forming a substrate of the interior trim part from a sheet of porous material loosely disposed in a forming tool;

- trimming a perimeter of the substrate;

- vacuum forming a cover material over the substrate;

- trimming and bonding attachments to the substrate.

12. The method according to claim 11, wherein the step of forming the substrate includes:

- providing the forming tool having a first and second part and a retaining portion formed at its outer periphery;

- heating the sheet of porous material;

- disposing the sheet between the first part and the second part of the forming tool;

- applying a predetermined low pressure to the sheet using the first and second part of the forming tool to form the sheet; and

maintaining tension to the sheet at the outer periphery of the forming tool to retain the sheet freely within the first and second part.

13. The method according to claim 12, wherein the substrate material is heated to about 450°F.

14. The method according to claim 12, wherein the predetermined low pressure is between 10 and 50 PSI.

15. The method according to claim 11, wherein the step of vacuum forming includes:

positioning the substrate made of a porous material on a vacuum forming fixture;

disposing the cover material over the substrate and disposing an adhesive between the substrate and the cover material;

heating the adhesive and the cover material; and

vacuum forming the cover material to the substrate.

16. The method according to claim 15, wherein the adhesive is heated to about 250°F.

17. A method for forming a substrate from a sheet of porous material, the substrate being of an interior trim part for a vehicle compartment, the method comprising:

providing a forming tool having a first and second part and a retaining portion formed at its outer periphery;

heating the sheet of porous material;

disposing the sheet freely between the first part and the second part of the forming tool;

applying a predetermined low pressure to the sheet using the first and second part of the forming tool to form the sheet; and

maintaining tension to the sheet at the outer periphery of the forming tool to retain the sheet freely within the first and second part.

18. The method according to claim 17, wherein the substrate material is heated to about 450°F.

19. The method according to claim 17, wherein the predetermined low pressure is between 10 and 50 PSI.

20. A method for vacuum forming a cover material over a substrate of an interior trim part for a vehicle compartment, the method comprising:

positioning the substrate made of a porous material on a vacuum forming fixture;

disposing the cover material over the substrate and disposing an adhesive between the substrate and the cover material;

heating the adhesive and the cover material; and

vacuum forming the cover material to the substrate.

21. The method according to claim 20, wherein the substrate includes Azdel.

22. The method according to claim 20, wherein the vacuum is created through the porous material to form the cover material to the substrate.

23. The method according to claim 22, wherein the vacuum created through the porous substrate is configured to draw the adhesive into the porous material of the substrate.

24. The method according to claim 20, wherein the adhesive is heated to about 275°F.

25. The method according to claim 20, wherein the adhesive is a web adhesive.

26. The method according to claim 25, wherein the web adhesive is laminated to the cover material.